PATENT

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Craig A. Slavin

Applicant: Liu
Serial No.: 10/061,830
Filing Date: 01/31/02
Title: Fuel Cell With Fuel Droplet Fuel Supply
Group Art Unit: 1745
Examiner: Yuan

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Commissioner for Patents
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REPLY BRIEF

Sir:

In response to the Examiner's Answer dated January 13, 2006, please enter and consider the following.

I. THE OBJECTION AND REJECTION UNDER 35 U.S.C. §§ 132 AND 112

Dependent claim 83 indicates that the "fuel supply apparatus" recited in claim 82 "directs a plurality of droplets into the fuel passage in a direction that is substantially parallel to the anode surface that receives fuel." The Office Action objected to the amendment that added this language under 35 U.S.C. § 132 and rejected claim 83 under the first paragraph of 35 U.S.C. § 112. Applicant's arguments concerning the objection and rejection were presented on pages 10-13 of the Appeal Brief. The Examiner's response was presented on pages 9-11 of the Examiner's Answer. The issues raised by the Examiner's Answer are discussed below.

A. Support Is Not Required For Limitations That Are Not Recited In The Claims

The Examiner's Answer asserted that claim 83 is not supported by application, as filed, because a skilled artisan "would not be able to deduce nor infer the facts [sic] how the fuel droplets travel ***in the fuel passage***." The Examiner's Answer also asserted that the drawings of the present application contradict the subject matter of claim 83 because the width of the dotted area (i.e. the area that represents the droplets in some of the drawings) varies "irregularly and randomly" along the "***beginning, middle and end*** of the travel path of the fuel droplets." The inaccuracy of these assertions notwithstanding,[1] the assertions are irrelevant because claim 83 does not indicate how the fuel droplets behave along the "beginning, middle and end" of the fuel droplet travel path.[2] To the contrary, claim 83 simply indicates that the fuel supply apparatus "directs a plurality of droplets into

[1] The "dotted area varies" assertion, for example, is analogous to asserting that a person driving from Alexandria, VA to San Francisco, CA is not traveling in a substantially westerly direction because the interstate highways are not perfectly linear from one end of the country to the other.

[2] "To satisfy the written description requirement, a patent specification must describe the ***claimed invention*** in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the ***claimed invention***." MPEP § 2163-I, emphasis added.

the fuel passage" in a particular direction. This aspect of the invention is clearly supported by the application, as was discussed in detail in the Appeal Brief. The manner in which the droplets behave as they move through the "beginning, middle and end" of the fuel passage is not recited in claim 83 and, accordingly, the application does not need to provide support for any particular type of "beginning, middle and end" movement.

B. The Examiner's Answer Incorrectly Refers To the Drawings As "Schematic"

The Examiner's Answer indicated that "[d]ue to the schematic nature of the drawings, one of ordinary skill in the art would not be able to deduce nor infer the facts [sic] how the fuel droplets travel in the fuel passage." Referring to FIG. 1, which is reproduced below, the Brief Description of the Drawings section of the application indicates that FIG. 1 is a ***"diagrammatic view,"*** not a "schematic" view. The word "diagrammatic" means "[a] plan, sketch, drawing, or outline designed to demonstrate or explain how something works or to clarify the relationship between the parts of a whole." *The American Heritage® Dictionary of the English Language, Fourth Ed. (2000)*. FIG. 1 clearly demonstrates the manner in which the invention defined by claim 83 works and the relationship between the parts of that invention. Specifically, the fuel supply apparatus 118 directs droplets into the fuel passage 114 and the droplets are directed in a direction that is substantially parallel to the anode surface that receives fuel. In other words, FIG. 1 (amongst others) clearly demonstrates and explains the aspects of the invention defined by claim 83 that are at issue here.

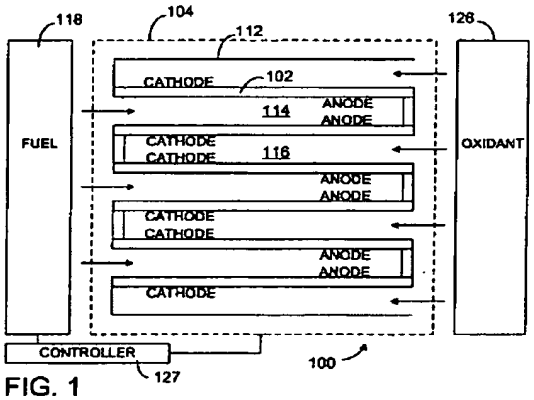

FIG. 1

C. The Examiner's Answer Incorrectly Characterised The Portions Of The Specification Associated With FIGS. 13-18

The Examiner's Answer included the following assertion concerning the embodiment illustrated in FIGS. 13-18 of the application.

> As shown in FIG. 18, the dotted lines not only intercept the anode surface at various locations along the fuel passage but also cross each other even when the lines of fire point in the same general direction (i.e., upward or downward). One of ordinary skill in the art would not recognize that the fuel droplets travel substantially parallel to the anode surface that receives fuel.

[Examiner's Answer at pages 10-11.] This assertion is incorrect at best, and misleading at worst, because it conveniently ignores the portions of the specification and drawings that describe fuel drops being ejected from the fuel supply apparatus illustrated in FIGS. 13-18 in directions other than that illustrated in FIG. 18.

As discussed at length in the Appeal Brief, from the bottom of page 11 to the top of page 13, the fuel supply apparatus 118e includes flextensional drop ejectors 172 with a plurality of nozzles 186. Referring to FIGS. 16 and 18, which are reproduced below, and to the specification at page 9, line 3 to page 10, line 24, the specification indicates that the flextensional drop ejectors 172 can be operated in a number of firing modes and fire fuel into the passages 114 in a variety of ways.

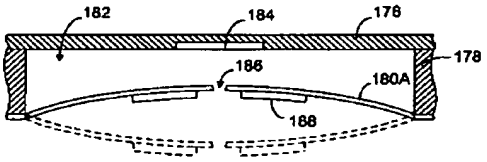

FIG. 16

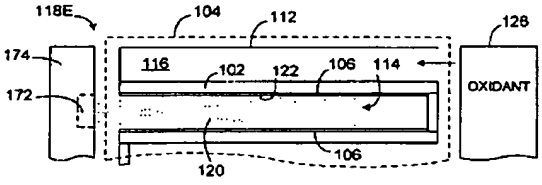

FIG. 18

In the ***first firing mode***, which is illustrated in FIG. 16, the fuel droplets ejected by the drop ejectors 172 "travel in a direction that is generally perpendicular to the plane defined by the outermost portion of the nozzle (i.e. straight out of the nozzle)." This direction is substantially parallel to the surface of the anode 106. The specification also states that the droplets can be fired "straight into the fuel passages 114." In the ***second firing mode***, which is illustrated in FIG. 17, the drops are ***not*** fired in a direction that is substantially parallel to the anode surface. Instead, the drop ejectors 172 "fire fuel droplets toward the surface of each anode 106 in the

manner illustrated for example in FIG. 18." Accordingly, the focus in the Examiner's Answer on the second firing mode droplet firing direction illustrated in FIG. 18 is improper because it ignores the description and drawings in the application concerning the first firing mode. The first firing mode is, however, the mode in which drops are fired in the manner described in claim 83.

D. Conclusion

As discussed in the Appeal Brief and the preceding sections of this Reply Brief, "a fuel supply apparatus [that] directs a plurality of fuel droplets into the fuel passage in a direction that is substantially parallel to the anode surface that receives fuel" was clearly illustrated and described in a manner that satisfies the requirements of 35 U.S.C. §§ 112 and 132. The rejection and objection under 35 U.S.C. §§ 112 and 132 are, therefore, improper and should be reversed.

II. THE REJECTION UNDER 35 U.S.C. § 102

The Office Action rejected claims 1-3, 7, 8, 11-15, 17, 20, 82, 84, 85 and 89 under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,440,594 to Kindler ("the Kindler '594 patent"). Applicant's arguments concerning the rejection under 35 U.S.C. § 102 were presented on pages 13-24 of the Appeal Brief. The Examiner's response was presented on pages 11-15 of the Examiner's Answer. The issues raised by the Examiner's Answer are discussed below in the context of the relevant claims.

A. Claims 1-3 and 7

As discussed in detail on pages 16-18 of the Appeal Brief, the Kindler '594 patent does not anticipate independent claim 1 because, for example, it does not teach or suggest a fuel cell system that has both "a fuel cell stack including ***a plurality of anodes***" and "***a single fuel supply apparatus*** that supplies a plurality of fuel droplets to ***each of the anodes***." To the contrary, the Kindler '594 patent

discloses one system in which a ***single*** aerosol generator 21 (with atomizers 25) supplies fuel droplets to a ***single*** anode 14 (see FIG. 1) and another system in which a ***plurality*** of in situ aerosol generators (with atomizers 612) respectively supply fuel to a ***plurality*** of anodes 602 (see FIG. 6).

Although it is not entirely clear, page 11 of the Examiner's Answer appears to have taken the position that the individual generators illustrated in FIG. 6 together comprise a "single fuel supply apparatus that supplies a plurality of fuel droplets." This position is not only outside the broadest reasonable interpretation of the claims, it conflicts with the explicit teachings of the Kindler '594 patent. The Kindler '594 patent specifically indicates that ***each*** anode 602 has an aerosol generator (i.e. an apparatus that supplies droplets) and each aerosol generator has a plurality of atomizers 612. [Column 15, line 63 to column 16, line 2.] Nothing in the Kindler '594 patent even remotely suggests that there is a single aerosol generator that supplies fuel droplets to a plurality of the anodes 602.

Additionally, and although it is not entirely clear, the arguments in the Examiner's Answer appear to have mixed and matched the elements of the system illustrated in FIG. 1 with the elements of the system illustrated in FIG. 6. Such mixing and matching, absent an explicit teaching to do so, is impermissible in a rejection under 35 U.S.C. § 102.[3]

As the Kindler '594 patent fails to teach or suggest each and every element of the combination recited in independent claim 1, applicant respectfully submits that the rejection of claims 1-3 and 7 under 35 U.S.C. § 102 should be reversed.

B. Claims 8 and 11-13

As discussed in detail on pages 18-20 of the Appeal Brief, the Kindler '594 patent does not anticipate independent claims 8 and 11 because it does not teach or suggest, for example, ***an anode pair with anodes that face one another and define a fuel passage therebetween*** in combination with a fuel supply apparatus that

[3] To anticipate, every element and limitation of the claimed invention must be found in a single prior reference, arranged as in the claim. *Karsten Manufacturing Corp. v. Cleveland Golf Co.*, 58 USPQ2d 1286 (Fed. Cir. 2001), *citing C.R. Bard, Inc. v. M3 Systems, Inc.*, 48 USPQ2d 1225, 1229-30 (Fed. Cir. 1998).

supplies (or "means for supplying") a plurality of droplets to the fuel passage between the anode pair.

Referring to page 12, the Examiner's Answer has taken an entirely different, albeit equally unsupportable, position than that which was taken in the Office Action. Specifically, the Examiner's Answer asserted that one of skill in the art would have recognized that "the anode biplate in Figure 6 above is defined as two parallel anodes facing each other to define a fuel passage between the anode surfaces." Applicant respectfully submits that this assertion is incorrect for a variety of reasons.

First and foremost, it should be noted that applicant devoted almost all of page 15 of the Appeal Brief to the fact that the use of the phrase "anode biplate" in the Kindler '594 patent appears to have been a typographical error. Specifically, applicant indicated that the Kindler '594 patent used two different terms for the element identified by reference numeral 602, i.e. "anode assembly 602" and "anode biplate 602." Applicant also indicated that the undersigned representative was unable to find a single instance of the use of the term "anode biplate," other than its use in column 15, line 60 to column 16, line 1 of the Kindler '594 patent, on the Yahoo® search engine, the Google® search engine, the USPTO web site (issued patents and published applications), and the Delphion® search engine (EPO applications and patents, PCT publications, Japanese abstracts, and German patents and published applications - see http://www.delphion.com/collect_descrip#EPA for collection details). The Examiner's Answer did not respond to this aspect of the Appeal Brief with anything other than the above-quoted assertion concerning the knowledge of those of skill in the art and, not surprisingly, the Examiner's Answer did not provided any evidence whatsoever - no issued patent, no published application, no journal article, no technical dictionary definition - in support of the assertion that a skilled artisan would define an "anode biplate" as two spaced parallel anodes with a fuel passage therebetween.[4]

The typographical error issue notwithstanding, the above-quoted assertion concerning "biplates" is clearly contradicted by the express teachings of the Kindler

[4] Applicant respectfully invites the Examiner to provide evidence regarding the knowledge of those of skill in art as it relates to "anode biplates" in a Supplemental Examiner's Answer.

'594 patent. Referring to FIG. 6, the Kindler '594 patent indicates that "[e]ach anode biplate 602 has an internal surface comprising a flowfield element 610 and an aerosol generator" and further indicates that "each atomizer 612 situated at the internal surface of the anode biplate 602 so as to atomize liquid fuel droplets into the anode chamber 616." [Column 15, line 63 to column 16, line 2.] Given the fact that (1) one of the internal surfaces of the "anode biplate 602" is covered by the flowfield element 610 and an aerosol generator (i.e. the plurality of atomizers 612) and (2) that the aerosol generator is firing drops into the anode chamber 616, the Examiner's "two anodes on opposite sides of the anode chamber 616" interpretation would appear to be impossible.[5]

The above-quoted assertion concerning "biplates" is also contradicted by the express teachings of the present application. More specifically, and as discussed in the Appeal Brief, the present specification states that "although the exemplary fuel cell stacks illustrated in FIGS. 1-19 have anodes facing one another, it should be noted that the inventions herein are applicable to the traditional bipolar configuration." [Spec. at page 4, lines 12-15.] Thus, to the extent that a "biplate" could be considered to be part of a bipolar fuel cell stack, such a stack would not include anodes that face one another with a fuel passage therebetween.

As the Kindler '594 patent fails to teach or suggest each and every element of the respective combinations recited in independent claims 8 and 11, applicant respectfully submits that the rejection of claims 8 and 11-13 under 35 U.S.C. § 102 should be reversed.

C. Claims 14, 15 and 17

As discussed in detail on pages 20-21 of the Appeal Brief, the Kindler '594 patent does not anticipate independent claim 14 because it does not disclose, for example, the step of "directing a spray of fuel droplets into ***a fuel passage that extends from a first anode in an anode pair to a second anode in the anode***

[5] Applicant respectfully invites the Examiner to provide a marked-up version of FIG. 6 of the Kindler '594 patent, showing precisely where the two anodes and the fuel passage therebetween are located, in a Supplemental Examiner's Answer.

pair such that at least some of the droplets come to rest on the first anode and at least some of the droplets come to rest on the second anode."

On page 13, the Examiner's Answer again asserted that one of skill in the art would have recognized that "the anode biplate in Figure 6 above is defined as two parallel anodes facing each other to define a fuel passage between the anode surfaces." The Examiner's Answer also concluded that such an arrangement would result in the practice of the claimed method steps. Applicant respectfully submits that the assertion, as well as the resulting conclusion, are incorrect for the reasons discussed in the preceding section of this Reply Brief.

The Examiner's Answer further asserted that FIGS. 4 and 5 of the Kindler '594 patent show how fuel droplets come to rest on the purported first and second anode surfaces. This assertion is also contradicted by the Kindler '594 patent. More specifically, FIGS. 4 and 5 merely show fuel droplets entering ***an individual pore in a single porous anode***. [Column 13, lines 46-49 and column 14, line 14-16.] As such, FIGS. 4 and 5 have no bearing whatsoever on the issue of whether or not the Kindler '594 patent discloses the step of "directing a spray of fuel droplets into a fuel passage that extends from a first anode in an anode pair to a second anode in the anode pair."

As the Kindler '594 patent fails to teach or suggest each and every step in the combination recited in independent claim 14, applicant respectfully submits that the rejection of claims 14, 15 and 17 under 35 U.S.C. § 102 should be reversed.

D. Claim 20

As discussed in detail on pages 21-22 of the Appeal Brief, the Kindler '594 patent does not anticipate independent claim 20 because the Kindler '594 patent fails to teach or suggest, for example, "a ***controller*** adapted to monitor a rate of fuel consumption at the anode and to ***control the fuel supply means to supply droplets at a rate that results in a fuel layer being maintained*** on the anode."

In response to the Appeal Brief, the Examiner's Answer asserted that the Kindler '594 patent teaches that the amount of fuel supplied to the anodes can be manipulated and that "it is preferable to prevent the anode, anode catalyst pores and

any support or backing material, from becoming saturated (flooded) with liquid fuel." [Examiners Answer at page 14.] Even assuming *arguendo* that both of these assertions are accurate, they do not necessarily lead to the conclusion that the Kindler '594 patent teaches or suggests maintaining a fuel layer on the anode, as would be required for a rejection under 35 U.S.C. § 102. To the contrary, these assertions appear to suggest ***preventing*** a fuel layer from being maintained on the anodes.

In view of the fact that the Office Action has not established that the Kindler '594 patent discloses at least one of the limitations recited in claim 20, the rejection of claim 20 under 35 U.S.C. § 102 is improper and should be reversed.

E. Claims 82, 84, 85 and 89

As discussed in detail on pages 22-24 of the Appeal Brief, the Kindler '594 patent does not anticipate independent claim 82 because it does not disclose, for example, "a fuel supply apparatus that ***directs a plurality of fuel droplets into the fuel passage in a direction that is non-perpendicular to the anode surface that receives fuel.***" To the contrary, the Kindler aerosol generators clearly direct droplets in a direction that is perpendicular to the anode surface. [Note, for example, FIG. 1.]

The Examiner's Answer attempted to rebut the arguments presented in the Appeal Brief with a discussion of Brownian motion and the manner in which droplets enter the anode pores illustrated in Kindler's FIGS. 4 and 5. Given the fact that claim 82 specifies the direction at which droplets are ***directed into*** a fuel passage by the fuel supply apparatus, as opposed to the direction at which each individual droplet is moving at any particular time after being directed into a fuel passage, the "Brownian motion/entry into the pores" discussion presented in the Examiner's Answer is essentially irrelevant. More importantly, the Examiner's Answer did nothing to change the fact that the Kindler '594 patent fails to even remotely suggest that the aerosol generators disclosed therein direct droplets in any direction other than perpendicular to the anode surface.

As the Kindler '594 patent fails to teach or suggest each and every element in the combination recited in independent claim 82, applicant respectfully submits that the rejection of claims 82, 84, 85 and 89 under 35 U.S.C. § 102 should be reversed.

III. THE REJECTION UNDER 35 U.S.C. § 103 BASED ON THE KINDLER '594 PATENT

The Office Action rejected claims 4-6 and 86-88 under 35 U.S.C. § 103 as being unpatentable over the Kindler '594 patent. Applicant's arguments concerning the rejection under 35 U.S.C. § 103 were presented on pages 25-26 and 28-29 of the Appeal Brief. The Examiner's response was presented on pages 15-16 and 17-19 of the Examiner's Answer. The issues raised by the Examiner's Answer are discussed below in the context of the relevant claims.

A. Claims 4-6

As discussed in detail on pages 25-26 of the Appeal Brief, the Kindler '594 patent does not render claims 4-6 obvious because, for example, it does not teach or suggest a "fuel cell" in combination with a "thermal drop ejector" (claim 4), a "piezoelectric drop ejector" (claim 5), or a "flextensional drop ejector" (claim 6). Instead, the Kindler '594 patent discloses "fuel cells" in combination with a "boiling/cooling" drop generator and a variety of atomizing drop generators, and nothing in the Kindler '594 patent itself even remotely suggests that "thermal," "piezoelectric" and/or "flextensional" drop ejectors could be used in place of the Kindler "boiling/cooling" and atomizing drop generators.

In response to the Appeal Brief, the Examiner's Answer provided a detailed discussion concerning the Kindler "boiling/cooling" drop generator, atomizing drop generators, and the manner in which the drop generators may be operated. The Examiner's Answer also asserted, based on nothing more than the Examiner's opinion, that "thermal," "piezoelectric" and "flextensional" drop ejectors are the functional and/or mechanical equivalents of the "boiling/cooling" and atomizing drop generators disclosed in the Kindler '594 patent.[6] The Examiner's Answer then

[6] To the extent that the Examiner has taken "official notice" with respect to knowledge generally available in the art, applicant traversed in the Feb. 12, 2004 amendment and requested an affidavit in accordance with MPEP § 2144.03 and 37 C.F.R. § 1.104(d)(2). To date, no such affidavit has been provided by the Examiner.

concluded that it would have been obvious to substitute "thermal," "piezoelectric" and "flextensional" drop ejectors for the "boiling/cooling" and atomizing drop generators disclosed in the Kindler '594 patent.

Referring to MPEP § 2144.06, there are at least two fundamental flaws associated with the basis for the rejection under 35 U.S.C. § 103 set forth in the Office Action and Examiner's Answer. First, the Office Action and Examiner's Answer failed to provide any evidence whatsoever - no issued patent, no published application, no journal article, no technical dictionary definition – which shows that the purported equivalency between "boiling/cooling" and atomizing drop generators and the claimed "thermal," "piezoelectric" and "flextensional" drop ejectors ***was recognized in the art***. Second, the mere fact that two components are functionally and mechanically equivalent is not, in and of itself, sufficient to establish a *prima facia* case of obviousness.

The rejection of claims 4-6 under 35 U.S.C. § 103 is, therefore, improper and should be reversed.

B. Claims 86-88

The Kindler '594 patent does not render claims 86-88 obvious because, for example, it does not teach or suggest a "fuel cell" in combination with a "thermal drop ejector" (claim 86), a "piezoelectric drop ejector" (claim 87), or a "flextensional drop ejector" (claim 88). [Appeal Brief at pages 28-29.] Instead, the Kindler '594 patent discloses "fuel cells" in combination with a "boiling/cooling" drop generator and a variety of atomizing drop generators, and nothing in the Kindler '594 patent suggests that "thermal," "piezoelectric" and/or "flextensional" drop ejectors could be used in place of the Kindler "boiling/cooling" and atomizing drop generators.

As discussed in the preceding section of this Reply Brief, the unsupported assertion in the Examiner's Answer that "thermal," "piezoelectric" and "flextensional" drop ejectors are the functional and/or mechanical equivalents of the Kindler "boiling/cooling" and atomizing drop generators does not establish a *prima facia* case of obviousness. The Office Action and Examiner's Answer failed to provide any evidence whatsoever which shows the purported equivalency ***was recognized in the***

art and the mere fact that two components are functionally and mechanically equivalent is not, in and of itself, sufficient to establish a *prima facia* case of obviousness. [See MPEP § 2144.06.]

The rejection of claims 86-88 under 35 U.S.C. § 103 is, therefore, improper and should be reversed.

IV. THE REJECTION UNDER 35 U.S.C. § 103 BASED ON THE KINDLER '594 PATENT AND THE PUN '382 PATENT

The Office Action rejected claim 16 under 35 U.S.C. § 103 as being unpatentable over the combined teachings of the Kindler '594 patent and U.S. Patent No. 6,152,382 to Pun ("the Pun '382 patent"). Applicant's arguments concerning the rejection under 35 U.S.C. § 103 were presented on pages 27-28 of the Appeal Brief. The Examiner's response was presented on pages 16-17 of the Examiner's Answer.

As discussed in detail on pages 27-28 of the Appeal Brief, the Kindler '594 and Pun '382 patents does not render claim 16 obvious because the Pun '382 patent, which is directed to "a spray apparatus that produces uniform sized atomized droplets controllable ***from fog size to larger*** for spraying fungicides, bactericides, pesticides, insecticides, plant nutrients and other materials applied to crop, ground, and foliage for agricultural and horticultural benefaction," would not have motivated one of skill in the art to add a fan to one of the fuel cell devices disclosed in the Kindler '594 patent. In particular, the Appeal Brief indicated that the Kindler '594 patent and Pun '382 patent lacked, and the Office Action failed to provide, the requisite "objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), *citations omitted.* The Appeal Brief also argued that the Office Action failed to ***identify a common problem*** that one of skill in the art would associate with both the generation of electricity with fuel cells and the production of "atomized droplets controllable ***from fog size to larger*** for spraying fungicides, bactericides, pesticides, insecticides, plant nutrients and other materials applied to crop, ground, and foliage for agricultural and horticultural benefaction" that could have supported the proposed

combination. *See, e.g., Ruiz v. A.B. Chance Co,* 69 USPQ2d 1686, 1691 (Fed. Cir. 2004).

The Examiner's Answer appeared to respond to the Appeal Brief by arguing that supplying fuel to fuel cells and "spraying fungicides, bactericides, pesticides, insecticides, plant nutrients and other materials applied to crop, ground, and foliage" are analogous arts. There are at least two fundamental flaws associated with this argument. First, the Office Action and Examiner's Answer failed to show that a person of ordinary skill, seeking to solve a problem of supplying fuel to fuel cells, would reasonably be expected or motivated to look to apparatus that are used for "spraying fungicides, bactericides, pesticides, insecticides, plant nutrients and other materials applied to crop, ground, and foliage." [See MPEP § 2141.01(a)-IV.] Second, the analogous art issue is not dispositive of the obviousness issue. Put another way, even assuming for the sake of argument that insecticide sprayers are considered analogous to fuel cell fuel suppliers, the Examiner must also provide evidence of an objective teaching to combine the references or evidence that ***those of skill in the fuel cell art*** have determined that there are common problems associated with supplying fuel to fuel cells and spraying plants with insecticide, in order to establish a *prima facia* case of obviousness. The Office Action and Examiner's Answer failed on both counts.

Accordingly, applicant respectfully submits that the rejection of claim 16 under 35 U.S.C. § 103 should be reversed.

V. CLOSING REMARKS

As applicant has shown in the Appeal Brief and this Reply Brief, the objection under 35 U.S.C. § 132 and rejection of claim 83 under 35 U.S.C. § 112 are improper and should be reversed, the rejection of claims 1-3, 7, 8, 11-15, 17, 20, 82, 84, 85 and 89 under 35 U.S.C. § 102 is improper and should be reversed, and the rejections of claims 4-6, 9, 16 and 86-88 under 35 U.S.C. § 103 are improper and should be reversed.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 08-2025. Should

such fees be associated with an extension of time, applicant respectfully requests that this paper be considered a petition therefor.

Respectfully submitted,

3/9/06
Date

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